

## December 2005 Update

### Rocky Flats Plant (USDOE) Superfund Site Jefferson County, Colorado (5-Year Review Date: 9/26/02)

#### *Highlights Since the 2002 5-Year Review*

- Removal of contaminated soils east of 903 Pad complete
  - Planned removal of all structures and facilities complete as of November 2005
  - Trench 1 source removal plan implemented
  - Comprehensive final remedy selection for annual funding completed
  - Long Term O&M requirements developed
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**Brief Site History:** The Rocky Flats site, which DOE renamed the Rocky Flats Environmental Technology Site, is located on 6,500 acres in Jefferson County, 16 miles northwest of downtown Denver. Approximately 300,000 people live within 10 miles of Rocky Flats. At one time the site stored more than 14 tons of plutonium, which was the second-largest repository of that element in the U.S. As of August 2003, all weapons grade plutonium has been shipped offsite.

Considerable amounts of plutonium were in liquid form, contained in deteriorating piping systems but all of those liquids have been drained from the piping and stabilized. Leaking storage drums, pipelines, underground tanks; unlined disposal trenches, surface-water impoundments, and two on-site landfills all contributed to the contamination of soils and ground water at the site. Volatile organic compounds (VOCs) contaminate shallow ground water in the central section of the site. The radioactive elements plutonium, uranium and americium contaminate soil in the central and eastern portions of the site; the most contaminated soils are located on the eastern edge of the industrial area. The potential for radionuclides (radioactive particles) to become airborne during strong winds is a concern, as is the potential for plutonium in soils to be washed into the two streams that flow on either side of the Industrial Area.

**Cleanup Activities Completed:** Some of the high-priority actions currently being conducted or recently completed include:

- Completed stabilization and repackaging 106 tons of plutonium residues.
- Shipped all weapons usable Special Nuclear Material to offsite facilities.
- Shipped approximately 63 percent of the site's estimated 12,600 cubic meters of transuranic waste to the Waste Isolation Pilot Plant (WIPP) in 2003.
- Revised the Soil Action Levels that govern the degree to which plutonium contaminated soils at the site will be cleaned up
- Treatment of groundwater using passive collection systems that feed into treatment cells using zero valent iron and sawdust.
- Excavation and off-site disposal of 32,000 tons of plutonium and americium contaminated soils and asphalt from the three acre 903 Pad was completed in December 2003.

**Current Status:** Removal of plutonium and americium contaminated surface soils east of the 903 Pad is complete and the Closeout Report was approved by the agencies (EPA and CDPHE)

on January 13, 2005. As of November 2005, all buildings or structures (total of 805) have been demolished or removed from the site and all Closeout Reports approved.

**Summary of Protectiveness:** The remedies for OU 1 and OU 3 are complete and protective. In addition, the remedies for the existing OU's and accelerated actions are also considered protective and functioning.

**Issues Impacting Protectiveness:** A few issues that do not immediately impact the protectiveness of the remedy were noted. The following table summarizes the status of the follow-up actions addressing these issues.

**Five-Year Review Update Table  
(Review Date: 9/26/2002)**

Issues	Recommendations/ Follow-up	Follow-up Actions (Status/Due Date)	Status of Follow-up Actions 12/05	Responsible Party
1) Trench1 source removal. Containers of depleted uranium contaminated with PCB's do not have a disposal or treatment option	- Identify and implement a disposal or treatment option prior to Site closure	6/30/05	Implemented.	Department of Energy (DOE)
2) Solar Ponds Plume-Elevated levels of nitrate and uranium concentrations	- Continue monitoring, evaluate and implement corrective actions to address potential to bypass treatment cell.	Installed pump in collection trench in Oct. 2002 to prevent contaminated groundwater from bypassing system. Continue to monitor & evaluate.	Installed pump in collection trench in Oct. 2002. Continue to monitor & evaluate.	DOE
3) Lack of definition of all areas requiring access restrictions	- Define areas that will require access restrictions  - Evaluate necessary controls, i.e. signs and barriers	Prior to closure	Prior to closure	DOE

Issues	Recommendations/ Follow-up	Follow-up Actions (Status/Due Date)	Status of Follow-up Actions 12/05	Responsible Party
4) Ecological risk has not been adequately analyzed	- CRA will include an ecological risk assessment.	Prior to closure	Prior to closure	DOE
5) Post-closure enforcement	- Define post-closure enforcement, monitoring and water management	Prior to closure	Prior to closure	DOE, EPA, Colorado Department of Public Health and Environment (CDPHE)
6) Land transfer and management responsibilities	- Negotiate memorandum of understanding to identify requirements in order to ensure management maintains future protectiveness	Prior to closure	Prior to closure	DOE, U.S. Fish and Wildlife
7) Funding for long-term activities	- Post-closure requirements regarding a comprehensive final remedy and obtain normal annual funding	12/31/05	Comprehensive final remedy selection and annual funding completed.	DOE
8) Reactive barrier O&M requirements	- Develop long term O&M requirements based on current operations, continue long term monitoring	12/31/05	Long-term O&M requirements developed.	DOE